

S/N 10/092,481

This listing of claims will replace ~~all~~ prior versions, and listings, of claims in the application. Please cancel claims 5 and 82-90 as follows:

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1. (Previously Canceled)
2. (Original) A method of coupling a tubular member to a preexisting structure, comprising:  
positioning a support member, an expansion cone, and a tubular member within a preexisting structure;  
injecting a first quantity of a fluidic material into the preexisting structure below the expansion cone; and  
injecting a second quantity of a fluidic material into the preexisting structure above the expansion cone.

3. (Previously Canceled)

4. (Previously Canceled)

5. (Currently Canceled)

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11. (Previously Canceled)

12. (Previously Canceled)

13. (Previously Canceled)

14. (Previously Canceled)

15. (Original) A method of coupling a tubular member to a pre-existing structure, comprising:

positioning an expansion cone and the tubular member within the preexisting structure using a support member;

displacing the expansion cone relative to the tubular member in the axial direction; and

decoupling the support member from the tubular member.

16. (Previously Canceled)

17. (Original) A method of coupling a tubular member to a preexisting structure, comprising:

coupling the tubular member and an annular expansion cone for engaging the tubular member to a tubular support member defining an internal longitudinal passage;

positioning the tubular member and the annular expansion cone within the preexisting structure using the tubular support member;

injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member;

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exhausting fluidic materials out of an annular chamber within the tubular member below the annular expansion cone through the internal passage of the tubular support member that are displaced by the downward displacement of the annular expansion cone; and  
decoupling the tubular support member from the tubular member.

18. (Original) The method of claim 17, wherein coupling the tubular member to the tubular support member comprises:

the tubular support member releasably engaging the tubular member at a plurality of circumferentially spaced apart locations.

19. (Original) The method of claim 18, wherein the plurality of circumferentially spaced apart locations are positioned below the annular expansion cone.

20. (Original) The method of claim 17, wherein injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member comprises:

displacing an annular piston positioned within the annular chamber above the annular expansion cone towards the annular expansion cone.

21. (Original) The method of claim 20, wherein displacing an annular piston positioned within the annular chamber above the annular expansion cone towards the annular expansion cone comprises:

exhausting fluidic materials displaced by the displacement of the annular piston into the internal passage of the tubular support member.

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22. (Original) The method of claim 20, wherein displacing an annular piston positioned within the annular chamber above the annular expansion cone towards the annular expansion cone comprises:

the annular piston applying a longitudinal force to the annular expansion cone.

23. (Original) The method of claim 17, wherein injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member comprises:

fluidically sealing off the internal passage of the tubular support member.

24. (Original) The method of claim 23, wherein injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member further comprises:

preventing debris from entering the annular chamber above the annular expansion cone.

25. (Original) The method of claim 17, wherein exhausting fluidic materials out of an annular chamber within the tubular member below the annular expansion cone through the internal passage of the tubular support member that are displaced by the downward displacement of the annular expansion cone comprises:

exhausting the fluidic materials through the internal passage of the tubular support member into an annulus between the tubular support member and the preexisting structure.

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26. (Original) The method of claim 25, wherein exhausting the fluidic materials through the internal passage of the tubular support member into an annulus between the tubular support member and the preexisting structure comprises:

exhausting the fluidic materials through a plurality of radial passages defined by the tubular support member into an annulus between the tubular support member and the preexisting structure.

27. (Original) The method of claim 26, wherein exhausting the fluidic materials through a plurality of radial passages in the tubular support member into an annulus between the tubular support member and the preexisting structure comprises:

exhausting the fluidic materials through a plurality of flow control valves housed within the tubular support member into an annulus between the tubular support member and the preexisting structure

28. (Original) The method of claim 17, wherein decoupling the tubular support member from the tubular member comprises:

pressurizing an annular chamber between the tubular support member and the tubular member.

29. (Original) The method of claim 28, wherein decoupling the tubular support member from the tubular member further comprises:

decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount.

30. (Original) The method of claim 29, wherein decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount comprises:

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displacing a retaining sleeve when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount.

31. (Original) The method of claim 30, wherein decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount further comprises:

displacing the tubular support member relative to the tubular member in the axial direction.

32. (Original) The method of claim 17, wherein decoupling the tubular support member from the tubular member comprises:

displacing the tubular support member downwardly relative to the tubular member; and

displacing the tubular support member upwardly relative to the tubular support member.

33. (Original) The method of claim 32, wherein decoupling the tubular support member from the tubular member further comprises:

displacing a retaining sleeve when the tubular support member is displaced downwardly relative to the tubular member.

34. (Original) The method of claim 32, wherein decoupling the tubular support member from the tubular member further comprises:

decoupling the tubular support member from the tubular member at a plurality of circumferentially spaced apart locations when the tubular support member is displaced upwardly relative to the tubular member.

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35. (Original) The method of claim 32, wherein decoupling the tubular support member from the tubular member further comprises:

displacing the tubular support member downwardly relative to the tubular member;

rotating the tubular support member relative to the tubular member; and

displacing the tubular support member upwardly relative to the tubular support member.

36. (Original) The method of claim 17, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

lubricating the interface between the annular expansion cone and the tubular member.

37. (Original) The method of claim 17, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

injecting a hardenable fluidic sealing materials through the internal passage of the tubular support member and the tubular member into an annulus between the tubular member and the preexisting structure.

38. (Original) The method of claim 17, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member.

39. (Original) The method of claim 38, wherein maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member comprises:

applying a longitudinal force to the annular expansion cone to maintain the annular expansion cone in contact with the tubular member.

40. (Original) The method of claim 17, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

stopping the radial expansion and plastic deformation of the tubular member by fluidically coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member.

41. (Original) The method of claim 40, wherein stopping the radial expansion and plastic deformation of the tubular member by fluidically coupling the annular chamber above the annular expansion cone to the tubular support member further comprises:

sensing the change in operating pressure of the injected fluidic material caused by fluidically coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member.

42. (Original) The method of claim 17, wherein the tubular member includes: one or more spaced apart external sealing members for sealing the interface between the tubular member and the preexisting structure; and one or more spaced apart engagement rings for engaging the preexisting structure.

43. (Original) The method of claim 42, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

preventing damage to the sealing members and the engagement rings during movement of the tubular member within the preexisting structure.

44. (Original) The method of claim 17, wherein the preexisting structure comprises a wellbore casing.

45. (Original) The method of claim 17, wherein the preexisting structure comprises an underground pipeline.



46. (Original) The method of claim 17, wherein the preexisting structure comprises a structural support.

47. (Original) A method of coupling a tubular member to a preexisting structure, comprising:

releasably coupling the tubular member to a tubular support member defining an internal longitudinal passage at a plurality of circumferentially spaced apart locations;

coupling an annular expansion cone for engaging the tubular member to the tubular support member;

positioning the tubular member and the annular expansion cone within the preexisting structure using the tubular support member;

fluidically sealing off the internal passage of the tubular support member;

injecting a fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member;

displacing an annular piston positioned within the annular chamber above the annular expansion cone towards the annular expansion cone;

exhausting fluidic materials displaced by the displacement of the annular piston into the internal passage of the tubular support member;

the annular piston applying an axial force to the annular expansion cone;

exhausting fluidic materials out of an annular chamber within the tubular member below the annular expansion cone through the tubular support member that are displaced by the downward displacement of the annular expansion cone;

exhausting the fluidic materials displaced by the annular expansion cone through a plurality of flow control valves housed within the tubular support

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member into an annulus between the tubular support member and the preexisting structure;  
stopping the radial expansion and plastic deformation of the tubular member by fluidically coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member and sensing the change in operating pressure of the injected fluidic material caused by fluidically coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member; and decoupling the tubular support member from the tubular member.

48. (Original) The method of claim 47, wherein decoupling the tubular support member from the tubular member comprises:  
pressurizing an annular chamber between the tubular support member and the tubular member.

49. (Original) The method of claim 48, wherein decoupling the tubular support member from the tubular member further comprises:  
decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount.

50. (Original) The method of claim 49, wherein decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount comprises:  
displacing a retaining sleeve when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount.

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51. (Original) The method of claim 50, wherein decoupling the tubular support member from the tubular member when the operating pressure within the annular chamber between the tubular support member and the tubular member exceeds a predetermined amount further comprises:

displacing the tubular support member relative to the tubular member in the axial direction.

52. (Original) The method of claim 48, wherein decoupling the tubular support member from the tubular member comprises:

displacing the tubular support member downwardly relative to the tubular member; and

displacing the tubular support member upwardly relative to the tubular support member.

53. (Original) The method of claim 52, wherein decoupling the tubular support member from the tubular member further comprises:

displacing a retaining sleeve when the tubular support member is displaced downwardly relative to the tubular member.

54. (Original) The method of claim 52, wherein decoupling the tubular support member from the tubular member further comprises:

decoupling the tubular support member from the tubular member at a plurality of circumferentially spaced apart locations when the tubular support member is displaced upwardly relative to the tubular member.

55. (Original) The method of claim 52, wherein decoupling the tubular support member from the tubular member further comprises:

displacing the tubular support member downwardly relative to the tubular member;

rotating the tubular support member relative to the tubular member; and

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displacing the tubular support member upwardly relative to the tubular support member.

56. (Original) The method of claim 47, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

lubricating the interface between the annular expansion cone and the tubular member.

57. (Original) The method of claim 47, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

injecting a hardenable fluidic sealing materials through the tubular support member and the tubular member into an annulus between the tubular member and the preexisting structure.

58. (Original) The method of claim 47, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member.

59. (Original) The method of claim 58, wherein maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member comprises:

applying a longitudinal force to the annular expansion cone to maintain the annular expansion cone in contact with the tubular member.

60. (Original) The method of claim 47, wherein the tubular member includes: one or more spaced apart external sealing members for sealing the interface between the tubular member and the preexisting structure; and

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one or more spaced apart engagement rings for engaging the preexisting structure.

61. (Original) The method of claim 60, wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

preventing damage to the sealing members and the engagement rings during movement of the tubular member within the preexisting structure.

62. (Original) The method of claim 47, wherein the preexisting structure comprises a wellbore casing.


63. (Original) The method of claim 47, wherein the preexisting structure comprises an underground pipeline.

64. (Original) The method of claim 47, wherein the preexisting structure comprises a structural support.

65. (Original) The method of claim 2, wherein the expansion cone comprises an annular expansion cone; and wherein positioning the support member, the annular expansion cone, and the tubular member within the preexisting structure comprises: releasably coupling the tubular member to a tubular support member defining an internal longitudinal passage at a plurality of circumferentially spaced apart locations positioned below the expansion cone; and coupling the annular expansion cone to the tubular support member.

66. (Original) The method of claim 2, wherein injecting the first quantity of the fluidic material into the preexisting structure below the expansion cone comprises: injecting a hardenable fluidic sealing material through the internal passage of the tubular support member and the tubular member into an annulus between the preexisting structure and the tubular member.

67. (Original) The method of claim 2, wherein the expansion cone comprises an annular expansion cone; and wherein injecting the second fluidic material through the internal passage of the tubular support member into the preexisting structure above the annular expansion cone comprises:

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- fluidically sealing off the internal passage of the tubular support member;
  - injecting the second fluidic material through the internal passage of the tubular support member into an annular chamber above the annular expansion cone to displace the annular expansion cone downwardly relative to the tubular member to radially expand and plastically deform the tubular member;
  - exhausting fluidic materials out of an annular chamber within the tubular member below the annular expansion cone through the tubular support member that are displaced by the downward displacement of the annular expansion cone;
  - exhausting the fluidic materials displaced by the annular expansion cone through a plurality of flow control valves housed within the tubular support member into an annulus between the tubular support member and the preexisting structure; and
  - stopping the radial expansion and plastic deformation of the tubular member by fluidically coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member and sensing the change in operating pressure of the injected fluidic material caused by fluidically coupling the annular chamber above the annular expansion cone to the internal passage of the tubular support member.

68. (Original) The method of claim 2, wherein the expansion cone comprises an annular expansion cone; and wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

lubricating the interface between the annular expansion cone and the tubular member.

69. (Original) The method of claim 2, wherein the expansion cone comprises an annular expansion cone; and wherein the process for coupling the radially expanded tubular member to the preexisting structure further comprises:

maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member.

70. (Original) The method of claim 69, wherein maintaining the annular expansion cone in a substantially stationary position relative to the tubular member prior to the initiation of the radial expansion of the tubular member comprises:

applying a longitudinal force to the annular expansion cone to maintain the annular expansion cone in contact with the tubular member.

71. (Original) The method of claim 2, wherein the preexisting structure comprises a wellbore casing.

72. (Original) The method of claim 2, wherein the preexisting structure comprises an underground pipeline.

73. (Original) The method of claim 2, wherein the preexisting structure comprises a structural support.

74. (Original) The method of claim 15, wherein decoupling the support member from the tubular member comprises:

pressurizing an annular chamber defined between the support member and the tubular member.

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75. (Original) The method of claim 74, wherein decoupling the support member from the tubular member further comprises:

decoupling the support member from the tubular member when the operating pressure within the annular chamber defined between the tubular support member and the tubular member exceeds a predetermined amount.

76. (Original) The method of claim 75, wherein decoupling the support member from the tubular member when the operating pressure within the annular chamber defined between the tubular support member and the tubular member exceeds a predetermined amount comprises:

displacing a retaining sleeve when the operating pressure within the annular chamber defined between the support member and the tubular member exceeds a predetermined amount.

77. (Original) The method of claim 76, wherein decoupling the support member from the tubular member when the operating pressure within the annular chamber defined between the support member and the tubular member exceeds a predetermined amount further comprises:

displacing the support member relative to the tubular member in the axial direction.

78. (Original) The method of claim 15, wherein decoupling the support member from the tubular member comprises:

displacing the support member downwardly relative to the tubular member; and  
displacing the support member upwardly relative to the tubular member.

79. (Original) The method of claim 78, wherein decoupling the support member from the tubular member further comprises:

displacing a retaining sleeve when the support member is displaced downwardly relative to the tubular member.



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80. (Original) The method of claim 78, wherein decoupling the support member from the tubular member further comprises:

decoupling the support member from the tubular member at a plurality of circumferentially spaced apart locations when the support member is displaced upwardly relative to the tubular member.

81. (Original) The method of claim 15, wherein decoupling the support member from the tubular member further comprises:

displacing the support member downwardly relative to the tubular member;  
rotating the support member relative to the tubular member; and  
displacing the support member upwardly relative to the tubular support member.

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